

MINED LAND RECLAMATION -- CHECKLIST

TITLE 40-8 UCA 1953
GENERAL RULES AND REGULATIONS
RULES OF PRACTICE AND PROCEDURE

DRAFT

American Gilsonite
MINE Bonanza
ACT 1047/010 COUNTY _____
COMPANY REPRESENTATIVE Richard Cahbert

MINE PLAN DATE 9/24/81
DATE RECEIVED 10/28/81
DOGM LEAD REVIEWER Gil

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
	LEGAL, FINANCIAL <i>Gilsonite</i>			
M-3/MR 1/1.	Name of Applicant	✓	✓	American Gilsonite Co 1150 Kennecott Bldg
M-3/MR 1/2.	Address Permanent Temporary		✓	
M-3/MR 1/3.	Company Representative Name Title <i>no title</i>			T.C. Mosely, Secretary-Treasurer Applicant should update Notice of Intention ACT 1047/010
M-3/MR 1/4.	Address Office Phone <i>no phone</i>			
M-3/MR 1/5.	Location County Township/Range/Section		✓	
M-3/MR 1/6.	Name of Mine		✓	BONANZA GILSONITE VEIN
M-3/MR 1/7.	Mineral to be Mined		✓	GILSONITE
M-3/MR 1/8.	Other Approvals/Listed <i>NO (Need Air Quality Order, WPDES ETC).</i>			provide names & addresses of all surface land owners.
M-3/MR 1/9.	Owners of Record of Land Affected			
M-3/MR 1/10.	Owners of Record of Minerals to be Mined —		✓	LEASE U-0126940
M-3/MR 1/11.	Owners of Record of all Other Minerals		✓	PLEASE SHOW if ANY SINCE 1977 <i>None</i> American Gilsonite, US GOVT STATE of Utah

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MINE 1

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M-3/MR 1/11a.	Notification of Other Owners in Writing	MR 1 UPDATE MR FORMS		
M-3/MR 1/12.	Legal Right to Enter & Conduct Operations			
M-3/MR 1/13.	Acreage <ol style="list-style-type: none"> 1. Operation Area 2. Access Road or Haulways 3. Drainage System 4. Total Land Affected 			The 1977 list of disturbed areas needs to be updated. PLEASE DELINEATE for MINES EACH & ALL SURFACE AREA proposed to be DISTURBED & CALCULATE ACREAGE - Provide on Map 1
M-3/MR 1/14.	Principal Executives, Officer & Partners Name Title Address			
M-3/MR 1/15.	Previous Notice of Intention Withdrawn			
M-3/MR 1/16.	Signed			
	<u>MAPS AND PLANS</u> <i>LEE & GIL</i>			
M-3(1)	True Copy Map or Plat			
M(3)(1)(a)	Land Affected Delineation			
M(3)(1)(b)	Within Land Affected <ul style="list-style-type: none"> Existing Mine Areas <ul style="list-style-type: none"> Active Abandoned (prior to May, 1975) Boundaries of Surface Properties Names of Surface Owners Names of Mineral Owners 			need map/plat showing the lands affected, active + inactive mines, property boundaries and surface and mineral ownership. DELINEATE map 1 " " " " " " " " " "

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M-2	<p>"Land Affected means the surface and subsurface of an area within the state where mining operations are being or will be conducted, including, but not limited to: on-site private ways, roads, and railroad lines appurtenant to any such area; land excavations; exploration sites; drill sites or workings; refuse banks or spoil piles; evaporation or settling ponds; leaching dumps; placer areas; tailings ponds or dumps; work parking, storage, or waste discharge areas; areas in which structures, facilities, equipment, machines, tools or other materials or property which result from or are used in such operations, are situated. All lands shall be excluded that would be otherwise includable as land affected but which have been reclaimed in accordance with an approved plan or otherwise, as may be approved by the Board, and lands in which mining operations have ceased prior to July 1, 1977."</p>			
M-3(1)(c) M6	<p>"All maps and plans prepared for submission with the Notice of Intention to Commence Mining Operations shall be of adequate</p>			

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M-3(1)(c) M6 (continued)	scale and detail to show topographic features and clearly indicate details of the proposed operations in accordance with Rule M-3. A color code, or other legend, shall be used in preparing all maps to clearly indicate surface features of the land affected."	OK		
M-3(1)(d)	Names and Locations Lakes, Rivers, Streams, Creeks Roads, Buildings Active, Abandoned Facilities Transmissions Lines (within 500 feet)	✓	✓	OK DELINEATE ON MAP 1
M-3(1)(e)	617 Drainage Plan Overburden, Topsoil, Waste Stockpiles Directional Flow Constructed Drainways, Diversions, Berms Receiving Waters			used a map showing topsoil/stockpiles, waste piles, drainage flow patterns around the disturbed areas and any diversions, culverts, berms or etc. PUT ON MAP 1.
M-3(1)(f)	Drill Holes 617 Location Status Depths and Thickness Water Bearing Strata Mineral Deposits Toxic Materials Revegetation Materials (topsoil)			
M-3(1)(g)	Locations of Disposal and Stockpile Areas 449 Topsoil Storage Overburden Materials Waste, Tailings, Rejected Materials Tailings-Ponds Discharge Points, Water Effluents			DELINEATE ON MAP. SHOW APPROX ANALYSIS OF WATER TO BE DISCHARGED

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	<u>EFFLUENT CONTROL</u>			
M-10/11	Methods for Controlling Sediment <i>ci</i>			Minimize GRADES.
M(3)(3)(11)	"Sediment Control--Mining operations shall be conducted in a manner such that sediment from areas disturbed in mining or reclamation activities is adequately controlled. The degree of sediment control shall be appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality, or other characteristics."			
M-3(1)(h)	Description of Water to be Disposed Expected Acid or Salt Content Expected Toxicity Expected Impact on Downstream Waters Description of Discharge Permits	<i>PROVIDE</i>		The DIVISION of state Health should be contacted concerning the mine water discharge. An NPDES permit will probably need to be applied for.
M-3(3)	<u>OPERATION PLAN/SITE CONSTRUCTION</u> <i>LEE</i>			
M-3(3)/MR 1-7 MR 2-7	Mining Method General Details If Sedimentary Deposit Seam Thickness Dip Outcrop	✓	✓	OK 2° Dip? if VERTICAL VEIN Show out-crop or Sub-crop on map Show sequence by year on map for life of mine Show typical x-section profile of road
MR 2-11(1)	Mining Sequence			
MR 2-11(b)	Construction and Maintenance of Access Roads Procedures Cross-section Profile			

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CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR 2-11(c)	Site Preparation Trees Brush			<i>Not included How dispose brush</i>
M-3(2)c MR 2-11(d)	Topsoil, Root Growth, Medium <i>Sue</i>			
MR-2/11(c)	Methods for Removal Amounts of Topsoil Removed Methods of Topsoil Protection	<i>no no no</i>	<i>no</i>	<i>need to include depth of topsoil, how it will be stored to prevent erosion (i.e. stored away from runoff areas, revegetated), how it will be removed (?)</i>
M-10(14)	"Soils--Except where slope or rocky rocky terrain make it impossible, all surficial materials, suitable as a growth medium, prior to any major excavation, shall be removed, segregated, and stockpiled according to its ability to support vegetation as determined by soil analysis and/or practical revegetation experience. The stockpiles shall be protected in such a manner as to minimize or prevent wind and water erosion, unnecessary compaction, and contam- ination by undesirable materials. Redistribution and surficial material after final grading shall be accomplished in such a manner as to promote revegetation success."			<i>show topsoil stockpiles</i>
M-3(2)c MR 2-11(e)	Disturbed and Excess Materials Tailings, Waste and Reject Handling Method of Placement and Containment Stability and Erosion Control Overburden Method of Placement and Containment Stability and Erosion Control Toxic Acid/Alkali Producing Materials	<i>no no yes</i>	<i>no no 2</i>	<i>Discuss erosion control drainage for topsoil & waste show waste reject piles - Any toxic? don't discuss how material was tested</i>

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MINE DOGM LEAD REVIEWER

CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
MR-2/10.	<i>see</i> Determination as Toxic, Acid, Alkali Testing Procedure and Results	<i>no</i>	<i>no</i>	<i>see p.6</i>
M-2 K(6)	"Toxic means any chemical or biological or adverse characteristic of the material involved which could reasonable be expect to negatively affect ecological or hydrological systems or could be hazardous to the public safety and welfare."			
M-10(6)	"Toxic Materials--All toxic or potentially toxic material, as defined by Rule M-2(k), shall be safely removed from the site or left in an isolated condition such that solid, liquid or gaseous toxic emissions to the environment are reasonably eliminated or controlled. Such isolation practices may include, but not be limited to, burial, subsurface injection, chemical precipitation or neutralization, and filtering. All appropriate regulations of the Division of Health must be complied with as well as Federal regulations."			
M-3(2)(c) MR-2/11(e)	Method of Placement and Containment Stability and Erosion Control	<i>no</i> <i>no</i>	<i>no</i> <i>no</i>	<i>Show for topsoil, waste and disturbed areas</i>

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M-3(2)	<u>RECLAMATION PLAN</u> <i>gwe</i>			
M-10	<p>"The following reclamation standards are established where applicable for all work or activity required to be performed in accordance with reclamation plans approved subsequent to June 1, 1978. Mine workings abandoned prior to May, 1975, need not be reclaimed unless said workings are utilized for subsequent operations. Areas on which these standards are proposed to be non-applicable will be designated on the maps submitted by this operator in accordance with Rule M-6, and may be shown on supplementary ground or air photographs.</p> <p>Said standards shall apply to all operators covered by a mining and reclamation plan and variances to all portions herein will be considered on a site-specific basis by the Division and/or Board."</p>	<i>yes</i>	<i>no</i>	<p><i>no timetable for the accomplishment of each major step in the reclamation plan.</i></p> <p><i>Will Reclamation proceed contemporaneously with mining sequence.</i></p>
M-2i	"Reclamation means actions performed during or after mining operations to shape, stabilize, revegetate, or otherwise treat the land affected in order to achieve a safe, stable, ecological condition and use which will be consistent with local environmental conditions."			

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CITATION	REGULATION	INCLUDED IN PLAN	ADEQUATE	COMMENTS
M-3(2)/MR 2,3 M-3(2)(a) M-3(2)(a) M-3(2)(b)	Land Uses Prior Land Uses Current Uses Potential Uses	yes	yes	in 1977 submission
M-10(1)	"Land Use--The operator shall abandon the area affected in a condition which is capable of supporting a postmining use that is compatible with probable land uses."			
M-3(2)/MR 2-4	Existing Vegetation Percent Cover	yes no	no	include sketches descriptive of vegetation. Need to describe existing community and determine percent ground cover using methods approved by BLM (M-10(1)(2)(a)) to meet rules standard
M-3(2)/MR 2-5	Existing Soils pH Soil Lab Reference	yes yes yes	yes yes yes	
M-3(2)/MR 2-6	Site Elevation Site Abandonment	yes yes	yes yes	
M-10(2)	199 "Public Safety and Welfare--The operator shall minimize hazards to the public safety and welfare following mining. Methods to minimize hazards shall include but not be limited to: (a) The closing of shafts and tunnels to prevent unauthorized or accidental entry.			Applicant must commit to fence off shafts - is 35' FOOT SURFACE BARRIER ADEQUATE - justify show x section and shaft sealing plan

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M-10(2) (continued)	<p>(b) The disposal of trash, scrap metal and wood, unusable buildings extraneous debris and other materials incident to mining in a manner approved by the Division and in accordance with the Rules and Regulations of the Division of Health.</p> <p>(c) The plugging and capping of ^{60 ft} drill, core or other exploratory holes as set forth in Rule M-3(5).</p> <p>(d) The posting of appropriate warning signs in locations where public access to operations is readily available.</p> <p>(e) The construction of berms, fences and/or barriers above high-walls or other excavations when required by the Division."</p> <p>Structure Removal ^{See}</p>			<p>Where will trash be disposed?</p> <p>upon abandonment unless needed for future use</p> <p>✓ All exploration drill holes need to be plugged and sites reclaimed according to Division guidelines.</p> <p>warning signs should be posted in areas readily accessible by the public.</p>
M-10(9)	<p>"Structures and Equipment--All structures, rail lines, utility connections, equipment, and debris shall be removed from the surface prior to regrading and reclamation unless temporarily abandoned or approved by the Division for a continuing use."</p>			<p>Describe structure Removal in reclamation schedule</p>

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M-3(2)(d) MR-2(f)	Procedures and Methods For Final Stabilization and Regrading <i>LSG</i>			
MR-2(a)	Typical Cross-section of Regraded areas Specific Description of Regrading areas			<i>show</i>
M-10(10)	<p>"Shafts and Portals--All shafts and portals shall be covered or closed and all trenches and small pits shall be backfilled or covered when a mine has been abandoned so as to eliminate any safety hazard.</p> <p>Roads and Pads--On-site roads and pads shall be reclaimed or stabilized when the operator determines that they are no longer needed for mining operations. The reclamation should include provisions for adequate surface drainage protection and unrestricted drainage crossings. When a road or pad is to be turned over to an approved continuing use, as determined by the operator, the operator shall turn over the property with adequate surface drainage, drainage structures, ditching, and in a general condition suitable for the continued use.</p> <p>Highwalls--In strip mining or open pit mining and in open cuts for pads or roadways all such highwalls shall be reclaimed by backfilling</p>			<p><i>1 ft slab no 4 bar rebar, 12" ϕ</i></p> <p><i>Will roads be upgraded?</i></p> <p><i>None</i></p>

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highwalls (continued)	<p>against them or by cutting the wall back to achieve a slope angle of 45° or less. Where the highwall is composed of solid rock; is designed to be stable utilizing benches, tie-backs, etc.; or, there is insufficient material reasonably available to backfill; or cutting the wall back would result in excessive damage to undisturbed land above the highwall; and taking into consideration suitable alternative safety measures; future land use, etc.; the Division may modify or waive the above requirements."</p>			
MR-2(e)	<p>Description of Maximum Slope Grades ^{LES}</p> <p>"Slopes--All waste piles, spoil piles, and fills shall, if possible, be regraded to a rounded configuration and they shall be sloped to minimize safety hazards and erosion. The angle of slope from the bottom to the top of the pile or fill can be greater than the surrounding terrain provided that the mass stability of the slope is assured and that the erosion of the slope is minimized by measures such as, but not limited to; terracing, surface drainage facilities, cross-slope ripping or scarifying and vegetation. In no case shall the slope of a pile or fill exceed the angle of repose of</p>	OK		<p>BASICALLY Flat</p> <p>SHOW EROSION DRAINAGE control</p>

M I N E D L A N D R E C L A M A T I O N -- C H E C K L I S T

MINE _____

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Slopes (continued)	the material or such lessor slope as required by the Division considering such factors as: land use, material properties, revegetation potential or erosion control."			
MR-2(1)	Description of Determining Stability of Reclaimed Fill Material			<i>Don't Know</i>
MR-2(f)	Description of the Method of Drainage Control for Regraded Areas <i>611</i> "Drainages--All natural channels and associated flood plains shall not be covered, restricted or rerouted by roads, pads, piles, fills or diversions unless specifically approved by the Division after a suitable hydrologic study and incorporating a sound hydraulic design. All drainage structures, sediment or flood control structures, spoil, ore, waste, fill material and debris must be removed from natural channels and flood plains before an operator abandons the site except where approved by the Division.			

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M-10(13)	<i>LA 2461</i> Dams--All major water impounding structures such as tailings, dams, water storage and supply dams, coal waste dams and major sedimentation control dams shall be reclaimed when abandoned so as to be nonimpounding, self-draining, mechanically stable and protected from erosion.			What is dike shown on map for? Drained ditch.
M-10(3)	Impoundments--All evaporation, tailings and sediment ponds; spoil piles, fills, pads and regraded areas shall be self-draining and nonimpounding when abandoned unless previously approved as an impounding facility by a lawful state or federal agency."			
MR-2(10)	Topsoil Distribution Plans <i>see</i> Specific Description of Spreading Topsoil/ Growth Medium Approximate Thickness of Topsoil/Growth Medium Description of Surface Preparation	no	no	need to discuss average depth of spread topsoil, more specific description of surface preparation
MR-2(3)	Revegetation Plans <i>see</i>	yes yes	yes ?	
MR-2(1)	Who Will Complete Revegetation? Seed Bed Preparation			need to discuss under what conditions harrowing will be used.

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MR-2(1)	Description of Soil Treatments to Aid Revegetation			
M-10.12	<i>see</i> "Practical land treatments may include but not be limited to: scarifying, mulching, fertilization, irrigation, chisel plowing, harrowing and the introduction of soil mycorrhiza.			
M-10.12	Description of Method for Testing Soil to Support Vegetation Fertilization Plans	<i>no yes</i>	<i>no no</i>	<i>should commit to test soil before revegetation if it will be sitting for a long time and add fertilizer or amendments as necessary.</i>
MR-2-2.	Mulch Type Rate/Acre	<i>yes</i>	<i>yes</i>	
	Seeding			
M-3(2)(e())	"A planting program as best calculated to revegetate the land affected. Where there is no original protective cover, an alternate practical procedure should be proposed to minimize or control erosion or siltation. When applicable, the objective in revegetation should be to stabilize the land as quickly as possible after it has been disturbed in order to achieve permanent and protective vegetative cover. Non-noxious native plants that will give a quick, permanent, protective cover and enrich the soil shall be given priority."			

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MR 2-1	Description of Seeding Method <i>See</i>	<i>yes</i>	<i>yes</i>	
MR 2-3	Justification of Seed Mix	<i>no</i>	<i>no</i>	<i>need to include a specific list from BOM indicating species + amounts to be reseeded. species should reflect post-mining land use.</i>
M-10(12)	"Revegetation--Where possible, a self-sustaining vegetative cover consisting of non-noxious perennial plants shall be established by the operator subsequent to final grading on the entire area affected. Plants shall be a diverse mixture of grasses, shrubs, forbs and where potential for forestation exists, trees; the mixture may include both native and introduced species. Revegetation shall be performed using professionally accepted methods such as seeding, transplanting or propagating by cuttings. (1) The species selection shall reflect the post-mining land use as set forth in Rule M-10(1)			
MR-2 3.	U. S. Soil Conservation Service			<i>not necessary unless there is a problem with topsoil.</i>
MR-2 3.	Test Plots Use of Seed Mix	<i>no</i>	<i>?</i>	
MR-2 3.	Description of Application Location/Facing (bearing) Rate Per Acre (PLS) Species Mix Per Location Season to be Planted Maintenance/Monitoring	<i>no</i> <i>yes</i>	<i>no</i> <i>no</i>	<i>need to determine if one mix will be used everywhere, commit to season of planting (in reclamation plan) need to discuss how revegetated area will be sampled to determine if success standard has been met.</i>

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MR-2/5.	Description of Irrigation Methods <i>see</i> To Establish Vegetation Inspections Frequency Purpose Livestock Grazing Fencing Vegetation Protection	yes no yes	? no yes	may want to water initially after planting if area is very dry (or plant right before snow falls) see comment under maintenance
M-3(2)(f)	Reclamation Schedule Estimated Time for Construction Estimated Time for Interim Reclamation Estimated Duration of Mining Operation	no no yes	no ? (estimate)	no discussion of interim reclamation (i.e. topsoil reveg.)
MR-2 8. M-3(2)f	A Time Table for the Accomplishment of Each Major Step in Reclamation Plans	no	no	need to include
M-5	Reclamation Surety Estimate Estimate Based on Reclamation Plan Cleanup and Removal of Structures Grading and Contouring Stabilization Labor Safety and Fencing Monitoring	 no	 no	
M-3	Standard of Reclamation Success "(2) Revegetation shall be deemed to be accomplished and successful when: (a) Species intended for revegetation by this Rule have achieved a surface cover of at least 70% of the representative vegetative communities surrounding the mine. Surrounding vegetative cover levels shall be	 no	 no	 need to set a standard by approved methods

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INCLUDED				
CITATION	REGULATION	IN PLAN	ADEQUATE	COMMENTS
(a) (continued)	<p>determined by the operator using professionally accepted inventory methods and be approved by the Division.</p> <p>(b) The vegetation initiated on the area affected has survived for at least three (3) growing seasons, is evenly distributed, and is not supported by irrigation or continuing soil amendments.</p> <p>(3) Exceptions to Part 12 may be granted by the Division for areas which consist of solid rock outcrops and it is demonstrated by the operator that sufficient surficial soil does not exist for covering said outcrops. Test plots established by the operator in consultation with the Division shall demonstrate after all practical land treatments have been attempted that the revegetation standards are not attainable."</p>			
M-10 MR-8	Commitment to Rule M-10.			